

CLAIMS

- 1 1. An interface for transactions among nodes in a network
2 including a plurality of nodes which execute processes involved in the
3 transactions, comprising:
4 a machine readable specification of an interface to transaction processes
5 stored in memory accessible by at least one node in the network, including
6 interpretation information providing a definition of an input document, and a
7 definition of an output document, the definitions of the input and output
8 documents comprising respective descriptions of sets of storage units and
9 logical structures for the sets of storage units.
- 1 2. The interface of claim 1, wherein the interpretation information
2 includes data type specifications for at least one logical structure in the
3 definitions of the input and output documents.
- 1 3. The interface of claim 1, wherein the interpretation information
2 includes at least one data structure mapping predefined sets of storage units for
3 a particular logical structure in the definitions of the input and output
4 documents, to respective entries in a list.
- 1 4. The interface of claim 1, including a repository in memory
2 accessible by at least one node in the network storing a library of logical
3 structures, and interpretation information for logic structures.
- 1 5. The interface of claim 1, wherein the machine readable
2 specification includes a document compliant with a definition of an interface
3 document including logical structures for storing an identifier of a particular

transaction, and at least one of definitions and references to definitions of input and output documents for the particular transaction.

6. The interface of claim 1, wherein the machine readable specification includes a document compliant with a definition of an interface document including logical structures for storing an identifier of the interface, and for storing at least one of specifications and references to specifications of a set of one or more transactions supported by the interface.

7. The interface of claim 6, wherein the machine readable specification includes a reference to a specification of a particular transaction, and the specification of the particular transaction includes a document including logical structures for storing at least one of definitions and references to definitions of input and output documents for the particular transaction.

8. The interface of claim 1, wherein the storage units comprise parsed data.

9. The interface of claim 8, wherein the parsed data in at least one of the input and output documents comprises:
character data encoding text characters in the one of the input and output documents, and
markup data identifying sets of storage units according to the logical structure of the one of the input and output documents.

10. The interface of claim 9, wherein at least one of the sets of storage units encodes a plurality of text characters providing a natural language word.

1 11. The interface of claim 8, wherein the interpretation information
2 for at least one of the sets of storage units identified by a particular logical
3 structure of at least one of the input and output documents, encodes respective
4 definitions for sets of parsed characters.

1 12. The interface of claim 8, wherein the storage units comprise
2 unparsed data.

1 13. The interface of claim 1, including a repository stored in memory
2 accessible by at least one node in the network of document types for use in a
3 plurality of transactions, and wherein the definition of one of the input and
4 output documents includes a reference to a document type in the repository.

1 14. The method of claim 13, wherein the repository of document
2 types includes a document type for identifying participant processes in the
3 network.

1 15. The interface of claim 1, wherein the definitions of the input and
2 output documents comprise document type definitions compliant with a
3 standard Extensible Markup Language XML.

1 16. The interface of claim 1, wherein the machine readable data
2 structure including interpretation information comprises a document organized
3 according to a document type definition compliant with a standard Extensible
4 Markup Language XML.

1 17. Apparatus for establishing participant interfaces for transactions
2 executed on a system including a network interface and a data processing
3 resources which execute a transaction processes of the transactions according to
4 a transaction processing architecture; comprising:

5 programs of instructions executable by the system, stored on a medium
6 accessible by the system, providing tools to build a definition of a participant
7 interface for a participant in a particular transaction, the definition of a
8 participant interface including a definition of an input document for the
9 participant and a definition of an output document for the participant, the
10 definitions of the input and output documents comprising respective machine-
11 readable descriptions of sets of storage units and logical structures for the sets of
12 storage units; and

13 programs of instructions executable by the system, stored on a medium
14 accessible by the system and responsive to the definitions of the input and
15 output documents, to compile data structures corresponding to the sets of
16 storage units and logical structures of the input and output documents
17 compliant with the transaction processing architecture, to compile instructions
18 executable by the system to translate the input document to the corresponding
19 data structures, and to compile instructions executable by the system to translate
20 output of the transaction processes into the sets of storage units and logical
21 structures of the output document.

1 18. The apparatus of claim 17, wherein the tools to build a
2 definition of a participant interface include instructions executable by the
3 system to access elements of the definition from a repository, the repository
4 storing a library of logical structures, and interpretation information for logic
5 structures used to build interface descriptions.

1 19. The apparatus of claim 18, wherein the repository stores
2 definitions of documents comprising logic structures.

1 20. The apparatus of claim 17, wherein the tools to build a
2 definition of a participant interface include instructions executable by the
3 system
4 to access a definition of another participant interface for a
5 complementary transaction, the accessed definition including a definition of an
6 input document for the complementary transaction, and a definition of an output
7 document for the complementary transaction; and
8 to establish the definition of the participant interface by including the
9 definition of the output document of the complementary transaction as the
10 definition of the input document of the interface being built.

1 21. The apparatus of claim 20, wherein the tools to build a
2 definition of a participant interface include instructions executable by the
3 system
4 to include the definition of the input document of the complementary
5 transaction as the definition of the output document of interface being built.

1 22. The apparatus of claim 17, wherein the tools to build a
2 definition of a participant interface include instructions executable by the
3 system to build a document compliant with a definition of a participant interface
4 document including logical structures for storing an identifier of a particular
5 transaction, and at least one of definitions and references to definitions of input
6 and output documents for the particular transaction.

1 23. The apparatus of claim 17, wherein the tools to build a
2 definition of a participant interface include instructions executable by the
3 system to build a document compliant with a definition of a participant interface
4 document including logical structures for storing an identifier of the participant
5 interface, and for storing at least one of specifications and references to
6 specifications of a set of one or more transactions supported by the participant
7 interface.

1 24. The apparatus of claim 23, wherein the a document compliant
2 with a definition of a participant interface document includes a reference to a
3 machine-readable specification of a particular transaction, and the specification
4 of the particular transaction includes a document including logical structures for
5 storing at least one of definitions and references to definitions of input and
6 output documents for the particular transaction.

1 25. The apparatus of claim 17, wherein the storage units comprise
2 parsed data.

1 26. The apparatus of claim 25, wherein the parsed data in at least one
2 of the input and output documents comprises:

3 character data encoding text characters in the one of the input and output
4 documents, and

5 markup data identifying sets of storage units according to the logical
6 structure of the one of the input and output documents.

1 27. The apparatus of claim 26, wherein at least one of the sets of
2 storage units encodes a plurality of text characters providing a natural language
3 word.

1 28. The apparatus of claim 25, wherein the specification includes
2 interpretation information for at least one of the sets of storage units identified
3 by the logical structure of at least one of the input and output documents,
4 encoding respective definitions for sets of parsed characters.

1 29. The apparatus of claim 25, wherein the storage units comprise
2 unparsed data.

1 30. The apparatus of claim 17, wherein data structures corresponding
2 to the sets of storage units and logical structures of the input and output
3 documents include programming objects including variables and methods
4 according to the variant transaction processing architecture.

1 31. The apparatus of claim 17, wherein the variant transaction
2 processing architectures of the transaction process includes comprises a process
3 compliant with an interface description language.

1 32. The apparatus of claim 17, wherein the definitions of the input
2 and output documents comprise document type definitions compliant with a
3 standard Extensible Markup Language XML.

1 33. The apparatus of claim 19, wherein the definition of one of the
2 input and output documents includes a reference to a document type in the
3 repository.

1 34. The apparatus of claim 18, wherein the repository includes
2 interpretation information specifying measurements of products subject of
3 transactions.

1 35. The apparatus of claim 18, wherein the repository includes
2 interpretation information specifying costs of products subject of transactions.

1 36. The apparatus of claim 18, wherein the repository includes
2 interpretation information specifying features of products subject of
3 transactions.

1 37. The apparatus of claim 18, wherein the repository includes
2 interpretation information specifying financial terms of transactions.

1 38. The apparatus of claim 18, wherein the repository includes
2 interpretation information specifying terms of shipment for products subject of
3 transactions.

1 39. Apparatus for establishing participant interfaces for transactions
2 executed on a system; comprising:
3 memory storing data and programs of instructions;
4 a data processor coupled to the memory which executes the programs of
5 instructions; wherein the programs of instructions include
6 tools to build a definition of a participant interface for a participant in a
7 particular transaction, the definition of a participant interface
8 including a definition of an input document for the participant
9 and a definition of an output document for the participant, the
10 definitions of the input and output documents comprising

11 respective machine-readable descriptions of sets of storage units
12 and logical structures for the sets of storage units; and
13 a compiler, responsive to the definitions of the input and output
14 documents, to compile data structures corresponding to the sets
15 of storage units and logical structures of the input and output
16 documents compliant with the transaction processing
17 architecture, to compile instructions executable by the system to
18 translate the input document to the corresponding data structures,
19 and to compile instructions executable by the system to translate
20 output of the transaction processes into the sets of storage units
21 and logical structures of the output document.

1 40. The apparatus of claim 39, including a repository stored in
2 memory accessible by the data processor, and wherein the tools to build a
3 definition of a participant interface include instructions executable by the
4 system to access elements of the definition from the repository, the repository
5 storing a library of logical structures, and interpretation information for logic
6 structures used to build interface descriptions.

1 41. The apparatus of claim 40, wherein the repository stores
2 definitions of documents comprising logic structures.

1 42. The apparatus of claim 39, wherein the tools to build a
2 definition of a participant interface include instructions executable by the
3 system
4 to access a definition of another participant interface for a
5 complementary transaction, the accessed definition including a definition of an

6 input document for the complementary transaction, and a definition of an output
7 document for the complementary transaction; and

8 to establish the definition of the participant interface by including the
9 definition of the output document of the complementary transaction as the
10 definition of the input document of the interface being built.

1 43. The apparatus of claim 42, wherein the tools to build a
2 definition of a participant interface include instructions executable by the
3 system

4 to include the definition of the input document of the complementary
5 transaction as the definition of the output document of interface being built.

1 44. The apparatus of claim 39, wherein the tools to build a
2 definition of a participant interface include instructions executable by the
3 system to build a document compliant with a definition of a participant interface
4 document including logical structures for storing an identifier of a particular
5 transaction, and at least one of definitions and references to definitions of input
6 and output documents for the particular transaction.

1 45. The apparatus of claim 39, wherein the tools to build a
2 definition of a participant interface include instructions executable by the
3 system to build a document compliant with a definition of a participant interface
4 document including logical structures for storing an identifier of the participant
5 interface, and for storing at least one of specifications and references to
6 specifications of a set of one or more transactions supported by the participant
7 interface.

1 46. The apparatus of claim 45, wherein the a document compliant
2 with a definition of a participant interface document includes a reference to a
3 machine-readable specification of a particular transaction, and the specification
4 of the particular transaction includes a document including logical structures for
5 storing at least one of definitions and references to definitions of input and
6 output documents for the particular transaction.

1 47. The apparatus of claim 39, wherein the storage units comprise
2 parsed data.

1 48. The apparatus of claim 47, wherein the parsed data in at least one
2 of the input and output documents comprises:
3 character data encoding text characters in the one of the input and output
4 documents, and
5 markup data identifying sets of storage units according to the logical
6 structure of the one of the input and output documents.

1 49. The apparatus of claim 48, wherein at least one of the sets of
2 storage units encodes a plurality of text characters providing a natural language
3 word.

1 50. The apparatus of claim 47, wherein the specification includes
2 interpretation information for at least one of the sets of storage units identified
3 by the logical structure of at least one of the input and output documents,
4 encoding respective definitions for sets of parsed characters.

1 51. The apparatus of claim 47, wherein the storage units comprise
2 unparsed data.

1 52. The apparatus of claim 39, wherein data structures corresponding
2 to the sets of storage units and logical structures of the input and output
3 documents include programming objects including variables and methods
4 according to the variant transaction processing architecture.

1 53. The apparatus of claim 39, wherein the variant transaction
2 processing architectures of the transaction process comprises a process
3 compliant with an interface description language.

1 54. The apparatus of claim 39, wherein the definitions of the input
2 and output documents comprise document type definitions compliant with a
3 standard Extensible Markup Language XML.

1 55. The apparatus of claim 41, wherein the definition of one of the
2 input and output documents includes a reference to a document type in the
3 repository.

1 56. The apparatus of claim 40, wherein the repository includes
2 interpretation information specifying measurements of products subject of
3 transactions.

1 57. The apparatus of claim 40, wherein the repository includes
2 interpretation information specifying costs of products subject of transactions.

1 58. The apparatus of claim 40, wherein the repository includes
2 interpretation information specifying features of products subject of
3 transactions.

1 59. The apparatus of claim 40, wherein the repository includes
2 interpretation information specifying financial terms of transactions.

1 60. The apparatus of claim 40, wherein the repository includes
2 interpretation information specifying terms of shipment for products subject of
3 transactions.

1 61. A method for programming a commercial transaction in a
2 network, comprising:
3 defining a machine readable definition of an input document for a node
4 in the network including resources to execute a process in the transaction, and a
5 machine readable definition of an output document for the node, the definitions
6 of the input and output documents comprising respective descriptions of sets of
7 storage units and logical structures for the sets of storage units; and
8 providing interpretation information for the logical structures to the
9 node.

1 62. The method of claim 61, wherein the interpretation information
2 includes data type specifications for at least one logical structure in the
3 definitions of the input and output documents.

1 63. The method of claim 61, wherein the interpretation information
2 includes at least one data structure mapping predefined sets of storage units for
3 a particular logical structure in the definitions of the input and output
4 documents, to respective entries in a list.

1 64. The method of claim 61, the step of providing interpretation
2 information includes providing a repository in memory accessible by at least
3 one node in the network storing a library of logical structures, and interpretation
4 information for logic structures.

1 65. The method of claim 61, including defining a machine readable
2 specification of an interface including a document compliant with a definition of
3 an interface document including logical structures for storing an identifier of a
4 particular transaction, and at least one of the definitions and references to the
5 definitions of the input and output document.

1 66. The method of claim 61, wherein the storage units comprise
2 parsed data.

1 67. The method of claim 66, wherein the parsed data in at least one
2 of the input and output documents comprises:
3 character data encoding text characters in the one of the input and output
4 documents, and
5 markup data identifying sets of storage units according to the logical
6 structure of the one of the input and output documents.

1 68. The method of claim 67, wherein at least one of the sets of
2 storage units encodes a plurality of text characters providing a natural language
3 word.

1 69. The method of claim 67, wherein the interpretation information
2 for at least one of the sets of storage units identified by a particular logical

3 structure of at least one of the input and output documents, encodes respective
4 definitions for sets of parsed characters.

1 70. The method of claim 66, wherein the storage units comprise
2 unparsed data.

1 71. The method of claim 61, wherein the definitions of the input and
2 output documents comprise document type definitions compliant with a
3 standard Extensible Markup Language XML.

1 72. The method of claim 61, including:
2 providing a parser to generate event signals in response to logical
3 structures in the definition of the input document; and
4 providing event listener programs which respond to the event signals to
5 execute the process.